LERNER, M. Ye.; SHIKYAYEVA, A. N.; POMENKO, N. M.

Distribution of metal on the cathode surface in alkaline electrolytes used for tin plating. Mashinostroenie no.5: 69-71 S-O '62. (MIRA 16:1)

1. Kiyevskiy institut grazhdanskogo vozdushnogo flota.

(Electrolytes) (Tin plating)

SHIRYAYEVA, A.P. (Novosibirsk)

Mass cultural practices conducted in a hospital. Med.sestra 21 no.10:56-57 O '62. (MIRA 16:4)
(RECREATIONAL THERAPY) (BIBLIOTHERAPY)

SHAKHOV, A.I.; SHIKYAYEVA, A.V.

Effect of adding small amounts of hydrophilic colloids to hydrophobic coagulating agents used in purifying water. Nauch. dokl.vys.shkoly; stroi. no.2:281-282 '59.
(MIRA 13:4)

1. Rekomendovana kafedroy santekhniki Khar'kovskogo instituta inzhenerov kommunal'nogo stroitel'stva.
(Water--Purification) (Colloids)

SAPOZHNIKOV, D.I.; ALKHAZOV, D.G.; EYDEL'MAN, Z.M.; BAZHANOVA, N.V.; LEMBERG, I.Kh.; MASLOVA, T.G.; GIRSHIN, A.B.; POPOVA, I.A.; SAAKOV, V.S.; POPOVA, O.F.; SHIRYAYEVA, G.A.

Incorporation of O^{18} from heavy oxygen water into violaxanthin due to the action of light on plants. Bot. zhur. 46 no. 5:673-676 My '61. (MIRA 14:7)

1. Botanicheskiy institut imeni V.L. Komarova AN SSSR, Leningrad.
(Oxygen—Isotopes) (Violaxanthin)

SAPOZHNIKOV, D.I.; MASLOVA, T.G.; BAZHANOVA, N.V.; POPOVA, O.F.;
CHERNOMORSKIY, S.A.; SHIRYAYEVA, G.A.

State of pigments in leaves. Trudy Bot. inst. Ser. 4 no.15:
53-67 '62. (MIRA 15:7)
(Chlorophyll) (Carotenoids)

EYDEL'MAN, Z.M.; SAPOZHNIKOV, D.I.; BAZHANOVA, N.V.; MASLOVA, T.G.; POPOVA, O.F., SHIRYAYEVA, G.A.

Relation between phosphorylation reactions and the transformation of xanthophylls in the course of photosynthesis. Trudy Bot. inst. Ser. 4 no.15:224-233 '62. (MIRA 15:7)
(Xanthophyll) (Photosynthesis) (Phosphorylation)

EYDEL'MAN, Z.M.; POPOVA, O.F.; SHIRYAYEVA, G.A., CHERNYAYEVA, I.I.

Effect of the inhibitors of the photochemical reaction of xanthophyll interconversion on the process of photosynthetic phosphorylation. Trudy Bot. inst. Ser. 4 no.16:142-153 '63. (MIRA 17:2)

SAPOZHNIKOV, D.I.; ALKHAZOV, D.G.; EYDEL'MAN, Z.M.; BAZHANOVA, N.V.; LEMBERG, I.Kh.; MASLOVA, T.G.; GIRSHIN, A.B.; POPOVA, I.A.; SAAKOV, V.S.; POPOVA, O.F.; SHIRYAYEVA, G.A.

Participation of xanthophylls in oxygen transport in the process of photosynthesis. Dokl. AN SSSR 154 no.4:974-977 F '64. (MIRA 17:3)

1. Botanicheskiy institut im. V.L. Komarova AN SSSR. Predstavleno akademikom A.L. Kursanovym.

SAPOZHNIKOV, P.I.; EYDEL'MAN, Z.M.; BAZHANOVA, N.V.; MASLOVA, T.G.; POPOVA, O.F.; SHIRYAYEVA, G.A.

Characteristics of the light reaction of xanthophyll conversion under conditions of anaerobiosis. Bot.zhur. 49 no.10:1463-1465 O '64. (MIRA 18:1)

1. Botanicheskiy institut imeni V.L.Komarova AN SSSR, Leningrad.

L 8870-66 EWT(m)/EPF(n)-2/EWP(v)/EWP(j)/T/EWA(h)/EWA(l) WW/GG/RM

ACC NR: AP5025959 SOURCE CODE: UR/0190/65/007/010/1707/1712

AUTHOR: Kurilenko, A. I.; Shiryayeva, G. V.; Karpov, V. L.

ORG: Branch of the Physicochemical Institute im. L. Ya. Karpov (Filial Fiziko-khimicheskogo instituta)

TITLE: Investigation of adhesion of radiation-hardened polyester resins onto highly oriented organic fibers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965, 1707-1712

TOPIC TAGS: polyester resin, synthetic fiber, adhesion, radiation polymerization

ABSTRACT: The adhesion between radiation-hardened polyester resins MGF-9, TMGF-11 and PN-1 and highly oriented viscose, lavsan, caprone and polypropylene fibers was investigated to ascertain bonding characteristics of polyester resins to polymeric fibers. Based on studies with MGF-9 and caprone, a change in gamma-radiation intensity from 65 to 580 roentgen/sec has practically no effect on adhesion. Increase in radiation dose to 10 Mrad increased the bond strength between the resin and fiber while further increase to 60 Mrad had practically no effect

Card 1/2 UDC: 678.01:53+678.674

L 8870-65

ACC NR: AP5025959

on adhesive strength. The magnitude of adhesion to the different resins decreases in the following order: viscose, lavsan, caprone, polypropylene; the adhesion between the latter and a given resin is about half of that between viscose and the resin. This dependence is qualitatively the same if the resin is hardened thermally or by radiation. The somewhat reduced adhesion between MGF-9 and caprone produced by radiation hardening in comparison to thermal hardening was attributed to changes in thesurface properties of the caprone fiber caused by radiation. "Ye. V. Starodubtseva participated in the experimental work. Measurements of physical properties of MGF-9 resin were conducted by O. P. Tatarenko and I. G. Nikulina. The authors thank I. A. Suskin and V. G. Medyannikov for participation in conducting the experiments." Orig. art. has: 2 figures and 3 tables.

SUB CODE: MT/ SUBM DATE: 09Nov64/ ORIG REF: 006/ OTH REF: 001

Card 2/2

KURILENKO, A .I.; SHIRYAYEVA, G.V.

Adhesion of thermoplastic and thermosetting polymers to synthetic highly oriented fibers. Dokl. AN SSSR 165 no.2: 383-386 N '65. (MIRA 18:11)

1. Fiziko-khimicheskiy institut im. L.Ya. Karpova, Moskva. Submitted April 23, 1965.

L 10178-66 EWT(m)/EWP(v)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP5028284 SOURCE CODE: UR/0020/65/165/002/0383/0386

AUTHOR: Kurilenko, A. I.; Shirvayeva, G. V. 44,55 44,55 49 B

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut) 44,55

TITLE: Adhesion of thermoplastic and thermosetting polymers to highly oriented synthetic fibers 15,44,55

SOURCE: AN SSSR. Doklady, v. 165, no. 2, 1965, 383-386

TOPIC TAGS: synthetic fiber, reinforced plastic, adhesion, destructive testing, polymer binder, polymer

ABSTRACT: Adhesive strength was tested by displacement of an individual fiber with respect to a block of the polymeric binder. The smooth surface of the fiber had a contact area of 1 to 1.5 mm^2 with the binder. The adhesive strength was calculated as the ratio of the force required for the destruction of the bond to the geometrical area of contact. The highest strength value (121 kg/cm^2) was observed for the capron fiber to polyvinyl alcohol bond. The order of adhesive strengths observed is explained in terms of the free-energy changes, i.e., surface-tension changes at the adhesion surface. Orig. art. has: 3 figures and 1 table. [VS]

SUB CODE: 11,07/ SUBM DATE: 06Apr65/ ORIG REF: 003/ OTH REF: 002/
ATD PRESS: 4154

Card 1/1 UDC: 678.01:620.179.4:541.183

S/191/62/000/004/011/017
B110/B136

15.8370

AUTHORS: Shifvaleva, O. V., Andreyevskaya, G. D.

TITLE: Method of determining resin adhesion on glass fiber surface

PERIODICAL: Plasticheskiye massy, no. 4, 1962, 45-46

TEXT: Two glass fibers stretched in parallel (120-150 μ) were coated with a resin film. A thin glass fiber (12-14 μ diameter) was stretched between them at an angle of 90°. The fibers are brought together in such a way that the thin one was completely covered with resin at the point of contact. The area of adhesion is the area of the side surface of a cylinder of diameter d and generatrix l. d is the diameter of the thin fiber, and l is the adhesion length, which is determined under a microscope. In contacting the thick fibers, the thin one is slightly bent, and thus is dipped into the resin surrounding the thick one, which thus simulates gluing under pressure. To polymerize the glue film with complete hardening, the test instrument is heated with the fibers in a thermostat. The adhesion of the resin film to the glass fiber is determined on a Schopper dynamometer. A paper frame with the glass fibers is fixed in clamps, and

Card 1/2

ANDREYEVSKAYA, G.D.; SHIRYAYEVA, G.V.

Adhesion of polymers to glass fibers. Part 3: Effect of the chemical composition of the glass and modification of its surface on the adhesion of a butvar-phenol polymer. Vysokom.soed. 5 no.11:1733-1737 N '63. (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR.

ACCESSION NR: AP4036724 S/0020/64/156/002/0372/0374

AUTHOR: Kurilenko, A. I.; Smetanina, L. B.; Aleksandrova, L. B.; Shiryayeva, G. V.; Karpov, V. L.

TITLE: Modification of the surface properties of grafted polystyrene caprone fibers

SOURCE: AN SSSR. Doklady*, v. 156, no. 2, 1964, 372-374

TOPIC TAGS: polystyrene, caprone fiber, polymer, gamma radiation, polyester, epoxoid, styrol sorption, styrol desorption, fiber resin, resin surface tension

ABSTRACT: The authors studied the effect of polystyrene grafts on caprone fibers using an industrial polyester, PN-1, and epoxoids. The grafting polymerization was initiated by Co^{60} γ-radiation employing a method which first required exposure under vacuum and then was carried out in a gas phase. This process also provided for the development of homopolymers. Four experiments were performed. The results are presented in graphs showing the kinetics of destroyed radicals in caprone fibers, the kinetics of the sorption and desorption of styroles in caprone fibers, the influence of grafted polystyrenes on the wettability of fiber resins, and the influence of grafted polystyrenes on the adhesion of resins to caprone fibers. The surface tension of the resin in each of the experiments was constant and indicated

Card 1/2

ACCESSION NR: AP4036724

similar changes in wettability. Orig. art. has: 4 figures, 1 formula, and 1 equation.

ASSOCIATION: Filial fiziko-khimicheskogo instituta im. L. Ya. Karpova (Affiliate of the Physicochemical Institute)

SUBMITTED: 16Dec63 DATE ACQ: 03 Jun64 ENCL: 00

SUB CODE: MT, OC NO REF SOV: 002 OTHER: 001

0

Card 2/2

L 40994-65 EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/RM
ACCESSION NR: AP5006567 S/0191/65/000/003/0059/0060

AUTHOR: Shiryayeva, G. V.; Kurilenko, A. I.; Karpov, V. L.

TITLE: Determination of resin adhesion to organic fibers with a diameter of 10-40 microns

SOURCE: Plasticheskiye massy, no. 3, 1965, 59-60

TOPIC TAGS: resin adhesion, adhesive strength determination, dicarboxylic acid ester, organic fiber, shear strength, viscose fiber, hardening agent, polycaprolactam fiber, polypropylene fiber, polyester resin, epoxy resin, polyethyleneglycol ester, phenol copolymer

ABSTRACT: The method of shear developed by Shiryayeva, Andreyevskaya and Gorbatkina (Plastmassy, No 4, 1962; Zhurnal Fizicheskoy Khimii, No 1, 1963) was used in a study of the adhesion, to viscose, kapron, vlavsan, and polypropylene fibers, of PN-1 polyester resin (a 67% solution of polyethyleneglycol maleate-phthalate in styrene) (1), ED-5 epoxy resin (2), and an epoxy-phenol (7:3) copolymer (3). Resin (1) was solidified by adding 3 wt% isopropylbenzene peroxide and 8 wt% of a 10% solution of cobalt naphthenate in styrene with 3-4 hrs. after heating at

Card 1/2

L 40994-65

ACCESSION NR: AP5006567

100C; polyethylenepolyamine, with a 5-hr. after heating at 100C, was used to [illegible] (2), and (3) was solidified by 18 hrs. heating at 100C. The results, given in a table, indicate that adhesion of (1), (2) and (3), to viscose, kapron, lavsan, and polypropylene fiber decreases in that order, varying from [illegible]-49.7 kg/cm^2 for polyproylene to 74.2 ->100 kg/cm^2 for viscose fiber. Orig. art. has: 1 table.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, IE

NO REF SOV: 011 OTHER: 001

Card 2/2

SHIRYAYEVA, I.A.

Method of reconditioning variator discs for ShB-140 and ShB-3 sizing machines. Obm.tekh.opyt. [MLP] no.15:19-21 '56. (MIRA 11:11)
(Textile machinery--Maintenance and repair)

SHIRYAYEVA, I.A.

New way of harness fixing on looms. Obm.tekh.opyt. [MLP] no.15: 21-22 '56. (MIRA 11:11)

(Looms)

ZVYAGINTSEVA, S.G., prof.; BAKHANOVA, V.F., kand.med.nauk; GROMOVA, R.V.; LEVINA, S.M.; SHIRYAYEVA, I.P.

Subendocardial fibroelastosis in children. Pediatriia 41 no.5:38-44 My '62. (MIRA 15:5)

1. Iz kafedry pediatrii (zav. - deystvitel'nyy chlen AMN SSSR prof. G.N. Speranskiy) TSentral'nogo instituta usovershenstvovaniya vrachey (rektor M.D. Kovrigina) i Detskoy bol'nitsy No.9 imeni F.E. Dzerzhinskogo (glavnyy vrach A.N. Kudryasheva).
(HEART--DISEASES)

SHIRYAYEVA, I.S.

Gas exchange modifications under physical exertion in children with congenital cardiac defects of the blue type. Pediatriia 38 no.9:21-27 S '60. (MIRA 13:12)

1. Iz Instituta pediatrii AMN SSSR (dir. i nauchnyy rukovoditel' - chlen AMN SSSR prof. O.D. Sokolova-Ponomareva).
(HEART--ABNORMITIES AND DEFORMITIES)

SHIRYAYEVA, I. S. Cand Med Sci -- "External respiration ~~function~~ in congenital heart defects in children." Mos, 1961 (Acad Med Sci USSR). (KL, 4-61, 212)

LIBOV, S.L.; SHIRYAYEVA, K.F.

First studies of patients operated on for congenital heart diseases. Vest.khir. 73 no.6:5-12 N-D '53. (MLRA 6:12)

1. Iz 2-y fakul'tetskoy khirurgicheskoy kliniki (nachal'nik - professor P.A.Kupriyanov) i kliniki detskikh bolezney (nachal'nik - professor M.S.Maslov) Voyenno-meditsinskoy akademii im. S.M.Kirova).
(Heart--Surgery)

LIBOV, S.L., dotsent (Leningrad, 9, Klinicheskaya, 2, kv. 2);
SHIRYAYEVA, K.F. (Leningrad, Plekhanova, 14, kv.28)

Certain vascular changes in congenital cyanotic heart diseases.
Vest. khir. 74 no.4:21-26 Je '54. (MLRA 7:7)

1. Iz 2-y fakul'tetskoy khirurgicheskoy kliniki (nach. prof. P.A. Kupriyanov) i kliniki detskikh bolezney (nach. prof. M.S.Maslov) Voyenno-meditsinskoy akademii im. S.M.Kirova.
(CARDIOVASCULAR DEFECTS, CONGENITAL,
*cyanotic vasc. changes in)
(BLOOD VESSELS, in various diseases,
*congen. cyanotic heart dis.)

LIBOV, S.L.; SHIRYAYEVA, K.F.

Peculiarities of the course and treatment of adhesive pericarditis in children. Pediatriia no.3:3-9 My-Je '55 (MLRA 8:10)

1. Iz 2-y kliniki fakul'tetskoy khirurgii Voyenno-meditsinskoy akademii imeni S.M.Kirova(nach.prof.P.A.Kupriyanov) i kliniki detskikh bolezney Voyenno-meditsinskoy akademii imeni S M Kirova (nach,prof. M.S.Maslov)
(PERICARDITIS, ADHESIVE, in infant and child
clin.aspects & indic.for surg.)

LIBOV, S.L.' professor; BURAKOVSKIY, V.I., kandidat meditsinskikh nauk; GUBLER, Ye.V., dotsent; AKIMOV, G.A., kandidat meditsinskikh nauk; SHIRYAYEVA, K.F.

Hypothermia in cardiac surgery. Vest.khir. 76 no.7:24-35 Ag '55. (MLRA 8:10)

1. Iz 2-y fakul'tetskoy khirurgicheskoy kliniki (nach-prof. P.A. Kupriyanov), kafedra patologicheskoy fiziologii (nach-prof. I.P.Petrov), nervnykh bolezney (nach-prof. S.I.Karchikyan) i kliniki detskikh bolezney (nach.-prof. M.S.Maslov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.

(BODY TEMPERATURE
hypothermia in surg. of heart)
(HEART, surg.
controlled hypothermia in)

LYUBOV, S.L., professor; KUTUSHEV, F.Kh., kandidat meditsinskikh nauk; SHIRYAYEVA, K.F.

Modern concepts of the diagnosis and treatment of patent ductus arteriosus. Vest.khir.76 no.8:11-18 S '55 (MLRA 8:11)

1. Iz 2-y fakul'tetskoy khirurgicheskoy kliniki (nach.P.A.Kupriyanov) i kliniki detskikh bolezney (nach.prof. M.S.Maslov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.
(DUCTUS ARTERIOSUS, PATENT
diag. & ther.)

LIBOV, S.L., professor; SHIRYAYEVA, K.F.

Diagnosis and treatment of congenital heart defects in children.
Sov.med. 21 no.4:21-28 Ap '57. (MLRA 10:7)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - prof. S.L.Libov) Kuybyshevskogo meditsinskogo instituta i somaticheskogo otdeleniya (zav. K.F.Shiryayeva) 2-y gorodskoy detskoy bol'nitsy.
(CARDIOVASCULAR DEFECTS, CONGENITAL
diag. & ther. in child.)

LIBOV, S.L.,professor; SHIRYAYEVA, K.F.

Postoperative hyperthermic syndrome. [with summary in English, p. 149]
Khirurgiia, 33 no.1:26-30 Ja '57 (MLRA 10:4)

I. Iz fakul'tetskoy khirurgicheskoy kliniki (zav.-prof. S.L. Libov) Kuybyshevskogo meditsinskogo instituta.
(SURGERY, OPERATIVE, complications, postop. fever) (Rus)
(FEVER, postop.) (Rus)

LIBOV, S.L., professor (Kuybyshev, Chernorechenskaya, d.1, kv.47);
SHIRYAYEVA, K.F.

Valvular stenosis of the pulmonary artery; diagnosis and treatment [with summary in English, p.158]. Vest.khir. 78 no.5:45-52 My '57. (MIRA 10:7)

1. Iz khirurgicheskoy kliniki usovershenstvovaniya vrachey (nach. - prof. P.A.Kupriyanov) i kliniki detskikh bolezney (nach. - prof. M.S.Maslov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.

(PULMONARY STENOSIS
diag. & ther.)

SHIRYAYEVA, K. F., Candidate Med Sci (diss) -- "The rational therapy of hypochromic anemia of young children in the light of ideas concerning its etiology and pathogenesis". Kuybyshev, 1959. 28 pp (Kuybyshev State Med Inst), 230 copies (KL, No 25, 1959, 142)

LIBOV, S.L.; KEVESH, Ye.L.; SHIRYAYEVA, K.F.

Recognition and treatment of primary tumor of the heart. Grud. khir. 1 no.1:101-106 Ja-F '59. (MIRA 13:6)

1. Iz detskogo otdeleniya (zav. K.F. Shirayeva) kliniki fakul'tetskoy khirurgii (zav. - prof. S.L. Libov) i kafedry rentgenologii i radiologii (zav. - prof. Ye.L. Kevesh) Kuybyshevskogo meditsinskogo instituta.
(HEART--TUMORS)

SOKOLOVA, A.A.; BURMISTROVA, Ye.M.; YALYNNAYA, P.I.; BRODYANSKAYA, Ye.I.; SHIRYAYEVA, K.K.; LEONOVA, V.F.; KOTEL'NIKOVA, Z.V.

Treatment of pericementitis in one visit. Stomatologiia 39 no.1: 15-17 Ja-F '60. (MIRA 14:11)

1. Iz TSentral'noy poliklinikl Ministerstva vnutrennikh del SSSR (nachal'nik M.D. Kormilitsyn).
(GUMS--DISEASES)

SHIRYAYEVA, K.F. (Kuybyshev-obl.) MAKSIMKINA, A.P. (Kuybyshev-obl.)

Case of complete congenital absence of the pericardium in a patient with pentalogy of Fallot; abstract. Kaz.med.zhur.no.1: 105-106 Ja-F'61 (MIRA 16:11)

BANDALIN, B. N.; RUBANOVICH, G. L.; SHIRYAYEVA, K. F.

Bronchography under anesthesia in children. Khirurgiia no.6: 50-57 Je '62. (MIRA 15:7)

1. Iz kafedry rentgenologii (zav. - prof. Ye. L. Kevesh) i kafedry fakul'tetskoy khirurgii (zav. - prof. S. L. Libov) Kuybyshevskogo meditsinskogo instituta.

(BRONCHI—RADIOGRAPHY) (PEDIATRIC ANESTHESIA)

LIBOV, S.L. (Minsk, ul. Very Khorunzhey, d. 5a, kv.17) ; SHIRYAYEVA, K.P.

Chronic pulmonary diseases in congenital abnormalities of the heart and large vessels. Grudn. khir. 4 no.5:72-80 S-O'62 (MIRA 17:3)

1. Iz kliniki grudnoy khirurgii i anesteziologii (zav. - prof. S.L. Libov) Belorusskogo instituta usove-shenstvovaniya vrachey (rektor - kand. med. nauk N. Ye. Savchenko).

SHIRYAYEVA, K.F., kand. med. nauk

Diagnosis and treatment of congenital heart defects. Zdrav. Bel. 9 no.7:24-28 Jl '63 (MIRA 17:4)

S/641/61/000/000/013/033
B104/B102

24.6600

AUTHORS: Petrzhak, K. A., Tolmachev, G. M., Ushatskiy, V. N., [illegible] M. A., Blinova, N. I., Bugorkov, S. S., Moskal'kova, E. A., Chilpova, V. B., Petrov, Yu. G., Sorokina, A. V., Chernysheva, L. P., Shiryayeva, L. B.

TITLE: Yields of some fragments in the fission of U^{235}, U^{238}, and Pu^{239} by fission neutrons

SOURCE: Krupchitskiy, P. A., ed. Neytronnaya fizika; sbornik statey. Moscow, 1961. 217-223

TEXT. The authors determined the yield of Sr^{89}, Zr^{95}, Mo^{99}, Ag^{111}, Cd^{115}, and Ba^{140} in the fission of U^{235}, U^{238}, and Pu^{239} by fission neutrons. A U^{235}-enriched uranium plate arranged in the thermal column of a heavy-water reactor of the AS USSR served as neutron source. 300-mg tablets and 1-μg targets were produced from each substance to be fissioned. The fission events were recorded in a fission chamber during the entire irradiation period (Fig. 1). The fission fragment yields were determined from their

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B104/B102

Yields of some fragments in . . .

β-activity. The absolute β-activity was measured by two standard instruments with end-window counters. These standard instruments were calibrated with preparations of the fission fragments to be studied which had been applied to a collodium film. The absolute β-activity of the standard preparations was determined either with a 4π-counter or with an end window counter having a window thickness of 0.005 ± 0.001 mg/cm^2. Six to eight measurements were made in three to four tablets (Fig. 3). The determination error of the fragment yield was between 6 and 11%. The fragment yield is found to depend on the isotope mass number. There are 4 figures, 3 tables, and 7 references: 3 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: Engelkemeir, D., Hovey T., Schover D., Radiochemical Studies. The Fission Products, Book 3, div. IV, vol. 9, 1334 (1951); Radiochemical Studies: The Fission Products. Book 3, div. IV, vol. 9, Appendix B, 2003 (1951); Keller H., Steinberg E., Glendenin L., Phys. Rev., 94, 4, 969 (1954); Turkevich A., Niday J., Phys. Rev., 84, 1, 52, (1951).

Card 2/6 2

KOZLOV, P.V.; IOVLEVA, M.M.; SHIRYAYEVA, L.L.

Thermodynamic investigation of copolymer solutions from ethylenic glycol, and terephthalic and sebatic acids. Vysokom.soed. 1 no.7: 1106-1111 Jl '59. (MIRA 12:11)

1. Moskovskiy gosudarstvennyy universitet.
(Polymers—Thermal properties)

Shiryayeva, L.V.

89-10-7/36

AUTHORS: Shiryayeva, L.V., Tolmachev, G.M.

TITLE: The Chemical Behaviour of Mo^{99} Formed on Neutron Irradiation of Uranium Compounds. (O khimicheskom povedenii Mo^{99}, obrazuyushchegosya pri obluchenii soedineniy urana neytronami.)

PERIODICAL: Atomnaya Energiya, 1957, Vol. 3, Nr 10, pp. 318-320 (USSR)

ABSTRACT: U_3O_8 and UO_2 (5 g - 50 g were in the course of 1 1/2 hours, heated up to temperatures of from 400 to 1200°C after irradiation with neutrons in oxygen and hydrogen. In this way the yield of Mo^{99} was measured. For U_3O_8 the yield of Mo^{99} depends mainly upon the annealing temperature but not upon the nature of the gas. The transformation of U_3O_8 into UO_2 has no influence upon the Mo yield on the occasion of the heating of U_3O_8 in hydrogen. During heating of U_3O_8 in oxygen (t = 1200°C) about 15 % Mo^{99} evaporate. In the case of hydrogen annealing no Mo^{99} evaporation was observed in the total temperature domain. If UO_2 is annealed in hydrogen, the Mo^{99} yield grows at

CARD 1/2

21(8) SOV/89-6-5-4/33

AUTHORS: Shiryayeva, L. V., Tolmachev, Yu. M.

TITLE: On the Chemical Behavior of Mo^{99} Which Is Formed During the Irradiation of Uranium Oxides by Slow Neutrons (O khimicheskom povedenii Mo^{99}, obrazuyushchegosya pri obluchenii okislov urana medlennymi neytronami)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 5, pp 528-532 (USSR)

ABSTRACT: U_3O_8- and UO_2-preparations are annealed in an argon current and in a vacuum after irradiation, and the extraction yields are measured in dependence on the annealing temperature. The results obtained are shown by a graph. In addition, volatilization of Mo^{99} from preparations annealed at high temperatures was measured. The results obtained are tabulated. The methods of producing the initial preparations and the method of leaching Mo^{99} from the said preparations are described by reference 1. Annealing in a vacuum is described separately. The following conclusions may be drawn from the results obtained: 1) The extraction of Mo^{99} from irradiated U_3O_8- and UO_2-preparations increases with increasing annealing temperature in the vacuum in the same manner as in the argon-, hydrogen-,

Card 1/3

On the Chemical Behavior of Mo^{99} Which Is Formed During the Irradiation of Uranium Oxides by Slow Neutrons

and oxygen current. From UO_2 annealed in an oxygen current at 1200°C it was possible to extract 97% of Mo^{99}. In the case of U_3O_8, which was annealed at 1200°C in a vacuum, only 71% Mo^{99} could be extracted. 2) In U_3O_8-UO_2-preparations annealed in an oxygen current and in a vacuum, volatilization of Mo^{99} begins at 900°C. With UO_2 annealed in an oxygen current at 1000 - 1200°C, an increased volatilization of Mo^{99} was found. 3) It was possible by extrapolation to determine also the dependence of the volatilization of Mo^{99} on the annealing time. If U_3O_8 is annealed in a vacuum for 5 hours, the volatilization of Mo^{99} is 100%, whereas in the case of UO_2 an annealing time of 7 hours is necessary. 4) On the basis of experimental data it was possible to plot the curves: logarithm of the percentage of extraction against 1/T. It was further possible to calculate the activation energy for the extraction of the Mo^{99} from uranium oxides. There are 3 figures, 1 table, and 14 references, 2 of which are Soviet.

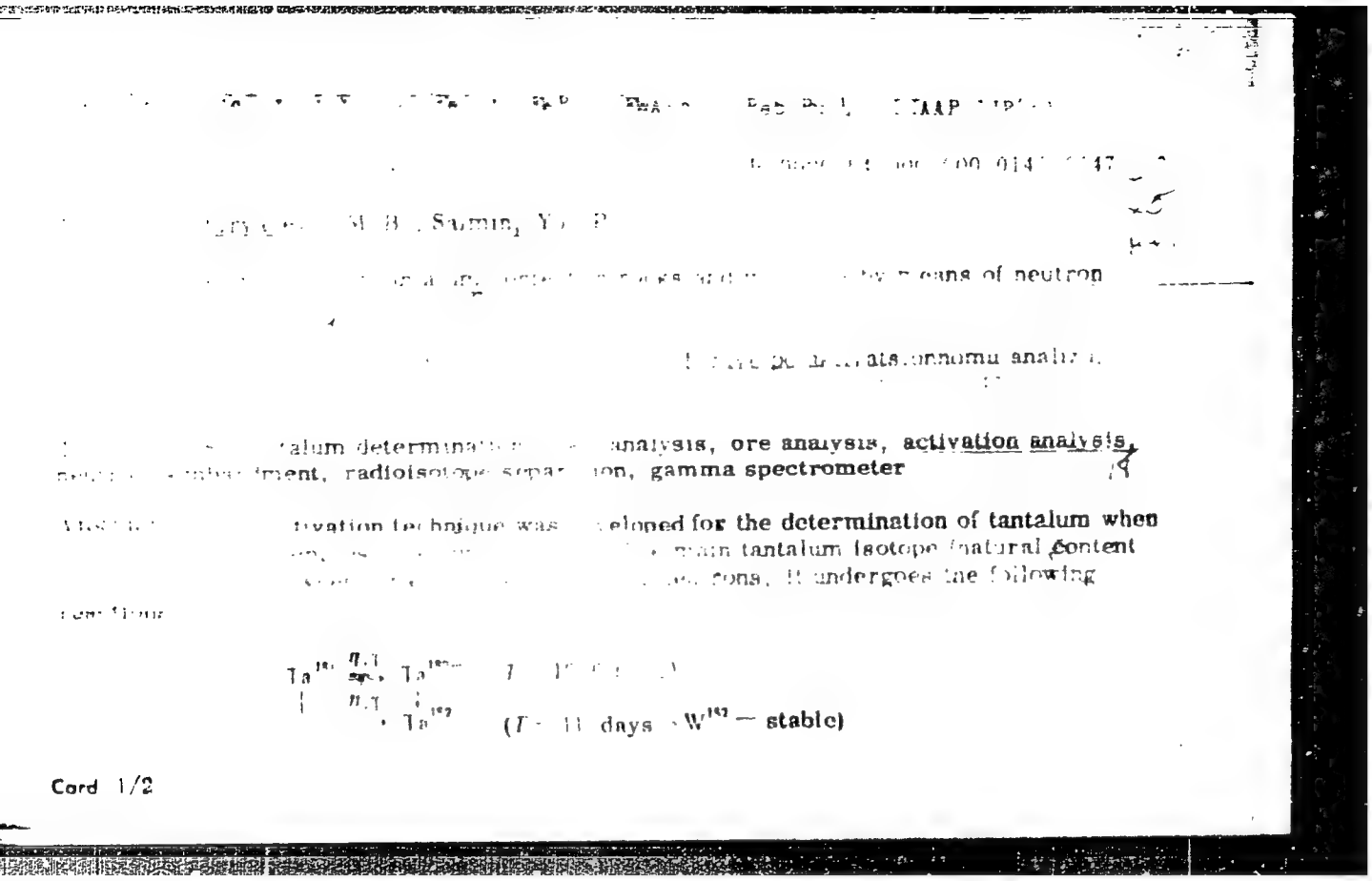
PETRZHAK, K.A.; TOLMACHEV, G.M.; USHATSKIY, V.N.; BAK, M.A.; BLINOVA, N.I.; BUGORKOV, S.S.; MOSKAL'KOVA, E.A.; OSIPOVA, V.V.; PETROV, Yu.G.; SOROKINA, A.V.; CHERNYSHEVA, L.P.; SHIRYAYEVA, L.V.

[Yields of certain fragments in U^{235}, U^{238}, and Pu^{239} fission by neutrons] Vykhody nekotorykh oskolkov pri delenii U^{235}, U^{238} i Pu^{239} neitronami deleniia. Moskva, Glav. upr. po ispol'zovaniiu atomnoi energii, 1960. 14 p. (MIRA 17:2)

GRAMMAKOV, A.G.; SLASHKIN, V.L.; SHIRYAYEVA, M.B.; SURAZHSKIY, D.Ya., red.; NIKONOV, A.I., red.; KLEPTSOV, F.P., red.; VLASOVA, N.A., tekhn.red.

[Instructions on gamma-ray testing of radioactive ores in the ore bed] Rukovodstvo po gamma-oprobovaniiu radioaktivnykh rud v estestvennom zaleganii. Moskva, Izd-vo glav.upr. po ispol'-zovaniiu atomnoi energii pri Sovete Ministrov SSSR, 1959. 56 p. (MIRA 13:2)

(Radioactivity--Measurements)
(Ores--Sampling and estimation)



[illegible] M. B. Saxena, Y. P. [illegible]

[illegible] beams of neutron [illegible]

[illegible] analysis.

[illegible]talum determination [illegible] analysis, ore analysis, activation analysis, [illegible]ment, radioisotope separation, gamma spectrometer

[illegible]tivation technique was [illegible]eloped for the determination of tantalum when [illegible] main tantalum isotope (natural content [illegible] cons. It undergoes the following [illegible]

$Ta^{181} \xrightarrow{n,\gamma} Ta^{182m}$ [illegible]

[illegible] $\xrightarrow{n,\gamma} Ta^{182}$ (T = 11 days $\rightarrow W^{182}$ — stable)

Card 1/2

L 52637-65

ACCESSION NR: AP5016[illegible] ... 100 rock, ore and mineral ... trons/cm^2 sec ...

... gases and ... tables

... [AUTHOR: Laboratoriya mineral'nogo syr'ya (All-Union Institute of Mineral Raw Materials)]

SUBMITTED: 02 Dec. 64 ENCL: 00 SUB CODE: NK, NP

NO REF SOV: 000 OTHER: 000

Card 2/2

Shiryayeva, N. A.

USSR / Pharmacology. Toxicology. Chemicotherapeutic Preparations. Anti-Biotics. V

Abs Jour : Ref. Zhur - Biologiya, No. 3, 1959, 14021

Author : Frishman, M.P.; Meshchaninova, Ye. A.; Litvinov, Ye. S.; Shinkarevskaya, A. S., Shiryayeva, N. A.

Inst : Kharkov Society of Medical Science

Title : Treatment of Syphilis With Ecmonovocillin.

Orig Pub : Tr. Khar'kovsk. nauchn. med. o-va, 1957, vyp. 9, 196-200

Abstract : No abstract

Card 1/1

1. OZEROV, G. V., SHIRYAYEVA, N. G.

2. USSR (600)

4. Tropical Plants-Uzbekistan

7. Wintering subtropicla plants in southern Uzbekistan.
Biul. Glav. bot. sada No. 13, 1952

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

KARAYEV, I.G.; SHIRYAYEVA, N.G.; YADROW, A.A.

[Nut trees of Tajikistan] Chormags va bodomu pistai Tochikiston. Stalinobod, Nashrieti davlatii Tochikiston, 1959. 70 p. [In Tajik] (MIRA 14:12)

(Tajikistan--Nuts)

27899
S/078/61/006/010/006/010
B121/B101

18 1152

AUTHORS: Popov, I. A., Shiryayeva, N. V.

TITLE: Constitution diagram of the niobium - copper system

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 10, 1961, 2334-2340

TEXT: The alloys of the niobium - copper system were studied by thermal, microstructural, and x-ray analyses; moreover, their hardness and electrical resistance were determined at different temperatures. Based on the results, the constitution diagram of the niobium - copper system was established. The alloys were prepared from electrolytic copper and high-purity niobium. Microstructural analyses showed that alloys containing 0.2 % of niobium are a solid solution of niobium in copper (alpha phase). A two-phase structure ($\alpha + \beta$) was found in copper alloys containing 0.2-97 % of niobium. Alloys containing more than 97 % of niobium are solid solutions of copper in niobium (beta phase). The solubility limit of niobium in copper is ~1.66 % at 1100°C, ~0.45 % at 1000°C, and ~0.2 % at 20°C. The solubility limit of copper in niobium was determined approximately (broken line in the constitution diagram, Fig. 8). An increase of the

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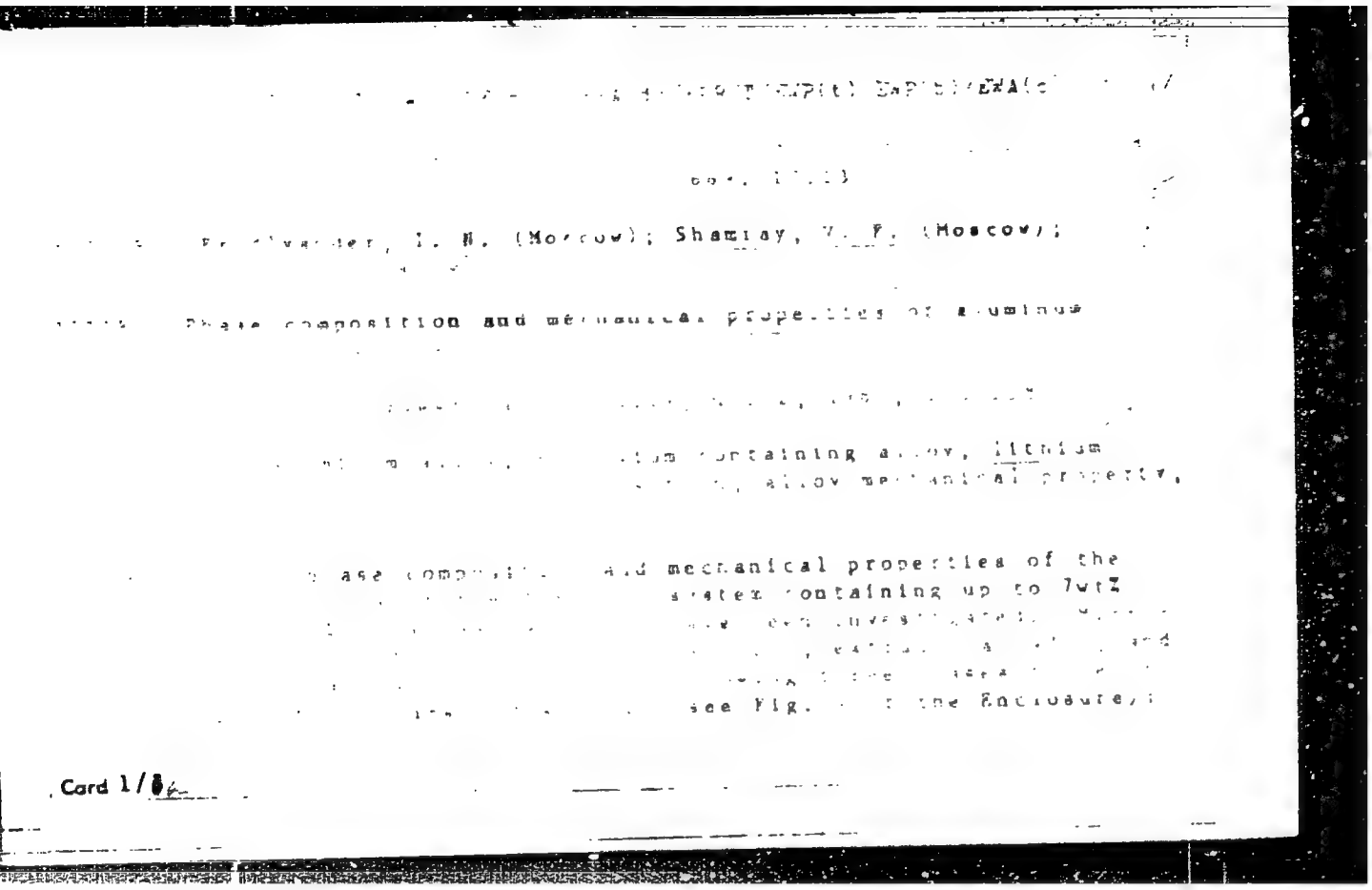
Constitution diagram of the...

niobium content in copper alloys results in a continuous increase of their hardness (10.70 % Nb, $H_V = 96.5$ kg/mm^2; 99.60 % Nb, $H_V = 293$ kg/mm^2). Up to an Nb content of 0.2 % the microhardness of the alpha phase increases to remain then almost constant. The electrical conductivity of alloys of the niobium - copper system with an Nb content of 3-4 and 20 % is 95 and 65 %, respectively, of the electrical conductivity of pure copper. The electrical resistance of the alloys increases very rapidly up to a niobium content of 0.2 %. This confirms that the maximum solubility of niobium in copper is 0.2 %. The electrical resistance of alloys of the niobium - copper system increases with rising temperature and increasing niobium content. A sudden increase in the electrical resistance of the alloys occurs at 1100°C owing to the formation of the liquid phase. There are 8 figures, 6 tables, and 5 references: 1 Soviet and 4 non-Soviet. The most recent reference to English-language publications reads as follows: C R Tottle, J. Inst. Metals, 85, 8 (1957).

SUBMITTED: September 23, 1960

Card 2/3



Card 1/8

L 52707-65

ACCESSION NR: AP5013119

1) the β-phase, a binary Al_3Mg_2 compound; 2) the ε-phase, a binary AlLi compound; and 3) the s-phase, a ternary Al_2LiMg compound. Mechanical testing of the alloys in the annealed, extruded, fresh solution-treated, and naturally or artificially aged conditions showed that [illegible] mechanical properties. [illegible] region [illegible] artificial aging increases their tensile strength [illegible] about 45 [illegible] kg/mm². The natural aging, however, [illegible] aging effect. Thus, the s-phase (Al_2MgLi) is the [illegible] for Al-Mg [illegible] alloys. Orig. art. has: 4 fig. [illegible] table. [illegible]MS

ASSOCIATION: none

SUBMITTED: 03Aug64 ENCL: 01 SUB CODE: MM

NO REF SOV: 006 OTHER: 003 ATD PRESS: 4012

Card 2/3

ACC NR: AT6024924 (A,N) SOURCE CODE: UR/2981/66/000/004/0152/0158

AUTHOR: Fridlyander, I. N.; Vlasova, T. A.; Skachkov, Yu. N.; Shiryayeva, N. V.; Surkova, Yu. I.; Gorokhova, T. A.; Ped', A. A.; Gur'yev, I. I.; Dzyubenko, M. V.

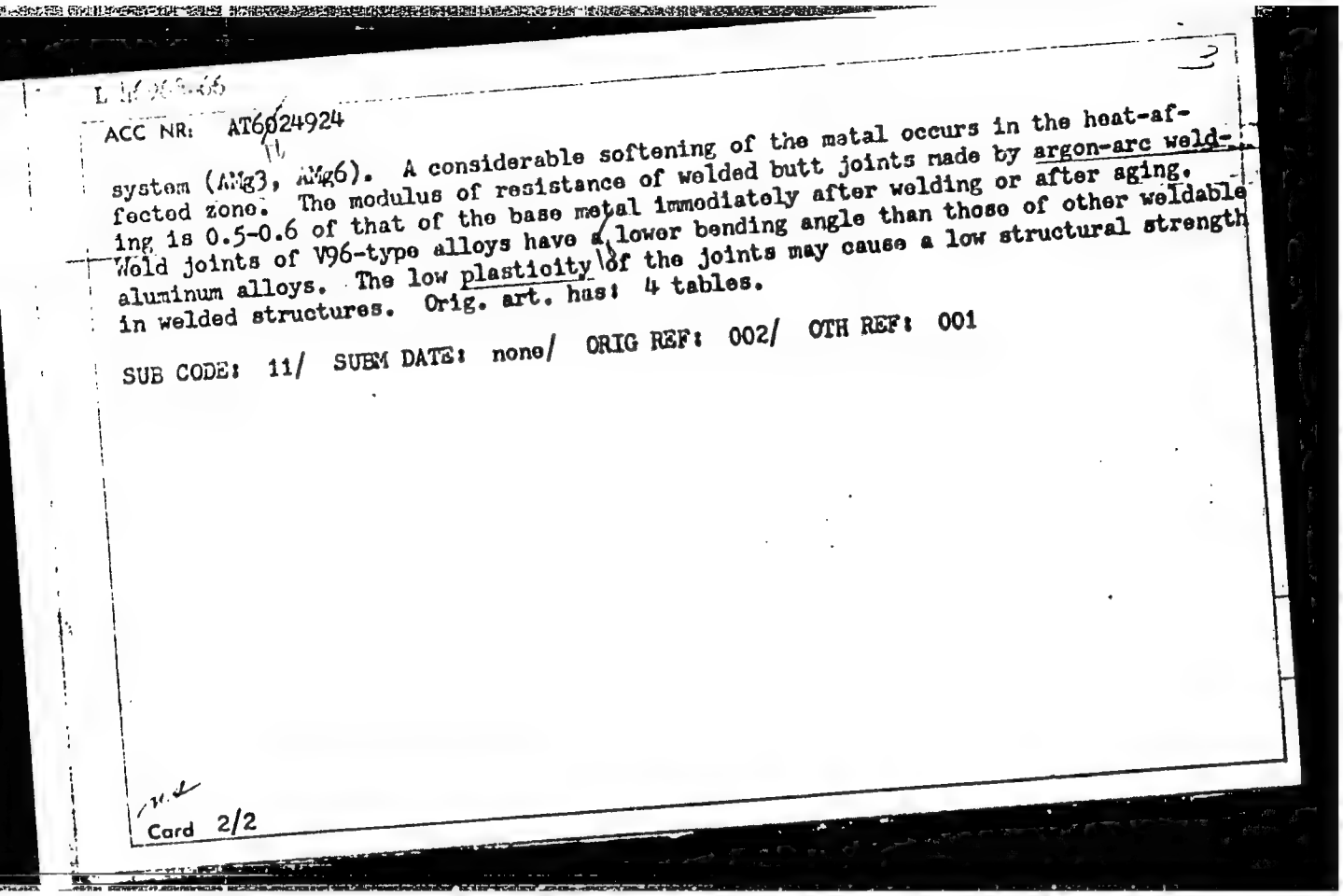
ORG: none

TITLE: Weldability of high-strength alloys of the Al-Zn-Mg-Cu system

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 152-158

TOPIC TAGS: aluminum zinc alloy, aluminum alloy property, weldability / V96 aluminum zinc alloy

ABSTRACT: The object of the work was to study the weldability in the fusion welding of V96 alloy, and also to determine whether the weldability of this alloy can be improved by changing the chemical composition of the base metal and filler wire. Sheets of V96 alloy 2.5 mm thick of the chemical composition 8.44% Zn, 2.72% Mg, 2.2% Cu, 0.06% Mn, 0.13% Zr, 0.29% Fe, and 0.13% Si were used in the experiments. In order to decrease the tendency toward crystallization cracks, the welding should be carried out with Al-Mg alloy fillers (of type AMg6). The content of the main alloying elements in the base metal should be kept within the following limits: 6.5-7.5% Zn; 2.7-3.5% Mg; 1.6-2.0% Cu; 0.15-0.22% Zr. However, even then the tendency of V96-type alloys to form cracks during welding remains higher than in commonly used alloys of the Al-Mg



L [illegible]

ACC NR: AT6024924

system (AMg3, AMg6). A considerable softening of the metal occurs in the heat-affected zone. The modulus of resistance of welded butt joints made by argon-arc welding is 0.5-0.6 of that of the base metal immediately after welding or after aging. Weld joints of V96-type alloys have a lower bending angle than those of other weldable aluminum alloys. The low plasticity of the joints may cause a low structural strength in welded structures. Orig. art. has: 4 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 001

Card 2/2

ACC NR: AT6024925 (A,N) SOURCE CODE: UR/2981/66/000/004/0159/0169

AUTHOR: Drits, M. Ye.; Kadaner, E. S.; Vashchenko, A. A.; Shiryayeva, N. V.; Fridlyander, I. N.

ORG: none

TITLE: Structure of weld joints of V96-type alloys

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 159-169

TOPIC TAGS: aluminum zinc alloy, aluminum alloy property, weld evaluation / V96 aluminum zinc alloy

ABSTRACT: The purpose of the study was to determine the influence of various alloying elements on the structure of V96-type weld joints by using filler wire of various compositions. A definite relationship was found between the tendency of the alloys to form hot cracks during welding and the structure of the transition zone of the weld joint. As a rule, the structure of the transition zone differs from the center of the seam in that it has coarser agglomerates of second excess phases along the grain boundaries; in most cases, these phases form a continuous network. The coarser the structure of the transition zone, greater its extent, more pronounced the network character of the structure, and greater the enrichment of the boundaries with brittle second phases, the more distinct is the tendency of the alloys to form hot cracks dur-

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ACC NR: AT6024925

ing welding. Conversely, a fine, regular structure of the transition metal zone and a discontinuity of the network of second phases correspond to lower values of the cracking coefficient. By selecting optimum welding conditions, one can influence the process so as to obtain a favorable structure in the transition zone and thus reduce the danger of failure of the weld joints. Orig. art. has: 7 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

Card 2/2

Sheremet'yev, Yu. A.

105

PHASE I BOOK EXPLOITATION SOV/6181

Ural'skoye soveshchaniye po spektroskopii. 3d, Sverdlovsk, 1960. Materialy (Materials of the Third Ural Conference on Spectroscopy) Sverdlovsk, Metallurgizdat, 1962. 197 p. Errata slip inserted. 3000 copies printed.

Sponsoring Agencies: Institut fiziki metallov Akademii nauk SSSR. Komissiya po spektroskopii; and Ural'skiy dom tekhniki VSNTO.

Eds. (Title page): G. P. Skornyakov, A. B. Shayevich, and S. G. Bogomolov; Ed.: Gennadiy Pavlovich Skornyakov; Ed. of Publishing House: M. L. Kryzhova; Tech. Ed.: N. T. Mal'kova.

PURPOSE: The book, a collection of articles, is intended for staff members of spectral analysis laboratories in industry and scientific research organizations, as well as for students of related disciplines and for technologists utilizing analytical results.

COVERAGE: The collection presents theoretical and practical problems of the application of atomic and molecular spectral analysis in controlling the chemical composition of various materials in ferrous and nonferrous metallurgy, geology, chemical industry, and medicine. The authors express their thanks to G. V. Chentsova for help in preparing the materials for the press. References follow the individual articles.

Fishman, I. S. Remarks on a system of standards for analysis of complex alloys 73

Shiryayeva, N. Ye., Yu. I. Mal'kov, and R. A. Kozlova. Photoelectric-stylometer analysis of vanadium cast irons 76

Basova, Ye. P., A. B. Shayevich, and S. B. Shubina. Spectrographic determination of harmful non-ferrous metal impurities in raw material intended for production of metallic chromium 77

Sorokina. N. N. Spectral determination of cerium, lanthanum, and barium in steel 80

Shayevich, A. B., and N. D. Startseva. Spectral determination of vanadium, manganese, silicon, and chromium in ferrovanadium 86

Gutkina, R. I. Chemical-spectral method of analysis of high-purity nickel 88

L 12035-66 EWT(m)/EWP(t)/EWP(b) LJP(c) JD
ACC NR: AP5024141 SOURCE CODE: UR/0075/65/020/009/0927/0933

AUTHOR: Kaplan, B. Ya.; Sorokovskaya, I. A.; Shiryayeva, O. A.

ORG: State Scientific-Research and Design Institute of Rare-Metal Industry, Moscow. (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redko-metallicheskoy promyshlennosti)

TITLE: Pulse-polarographic method of solution analysis at elevated temperatures

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 9, 1965, 927-933

TOPIC TAGS: polarographic analysis, trace analysis, zinc, ~~gallium compound, indium compound, titanium, columbium, tantalum~~

ABSTRACT: A pulse-polarographic method has been developed for determining zinc in gallium, antimony, and indium antimonide (after extraction of zinc thiocyanate) in a hot 1 N solution of NH_4Cl. Dissolve 0.5 g of metal or intermetallide in quartz crucible by adding 5 ml HNO_3 and 1 ml HCl, evaporate solution to dryness, dissolve residue in 5 ml HCl (1:1), and transfer into a separatory funnel using 25 ml 10% solution of NH_4SCN in IN HCl. Extract zinc with 25 ml isoamyl alcohol, wash extract with a solution of NH_4SCN acidified with HCl, re-extract zinc twice in 5-ml

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ACC NR: AP5024141

portions of 1M NH_4Cl - 1M NH_4OH. In analyses of indium or indium antimonide, centrifuge out the indium hydroxide from the re-extraction after heating briefly. Decant solution into a quartz crucible and add to the transparent re-extract 0.05ml saturated solution of KCl and 5 ml. HNO_3, After 20-40 minutes (to allow for liberation of N oxides), evaporate solution to dryness with slow heating. The ammonium salts are driven off first in a sand bath and then in the muffle furnace (3 minutes at 350-400 C). Dissolve the dry residue in few ml 1N NH_4Cl, transfer to quartz electrolyzer with water jacket (water temperature in thermostat 85-90C). After passing a current of nitrogen through the solution, use the polarograph within the range from -1.3 to -0.8 v, and determine the zinc by the method of additions, taking into account the results of the blank run. The pulsepolarographic method has also been developed for determining titanium in niobium, tantalum, and their pentoxides, without separation of bases in hot sulfuric-oxalic acid solutions. The sensitivity of determination is n x 10^{-4}%. Orig. art. has: 4 figures and 3 tables.

SUB CODE: 07 SUBM DATE: 11May64/ ORIG. REF: 006/ OTH. REF: 009

2/2

ALIMARIN, I.P.; PUZDRENKOVA, I.V.; SHIRYAYEVA, O.A.

Preparation of sodium cerium periodate. Vest.Mosk.un.Ser.2: Khim. 17 no.2:61-62 Mr-Ap '62. (MIRA 15:4)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.
(Cerium salts) (Potassium periodates)

ACCESSION NR: AP4013302 S/0032/64/030/002/0183/0185

AUTHORS: Shiryayeva, O. A.; Melamed, Sh. G.

TITLE: The effect of solution composition on the radiation intensity of rare earth elements in a hydrogen-oxygen flame

SOURCE: Zavodskaya laboratoriya, v. 30, no. 2, 1964, 183-185

TOPIC TAGS: rare earth element, yttrium, europium, lanthanum, gadolinium, dysprosium, samarium, hydrogen oxygen flame, perchloric acid, ethanol, radiation, radiation intensity

ABSTRACT: A 250-mg sample of Y_2O_3-Gd_2O_3 was dissolved in 5 ml of $HClO_4$, diluted with water to 25 ml, and subjected to spectrographic examination on a ISP-51 apparatus with a photoelectric attachment FEP-1 against standard solutions of yttrium and gadolinium. The hydrogen-oxygen flame device was constructed by M. E. Britske. Mixtures of yttrium-dysprosium oxides, and of europium-samarium oxides were also analyzed in a similar way. It was found that while the amount of yttrium in standard mixtures dissolved in hydrochloric acid was estimated as 45%, 55%, and 35%, the same samples, when dissolved in perchloric acid, yielded 48%, 56%, and 33.8% respectively. When an aqueous solution of perchlorates of rare earth metals

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ACCESSION NR: AP4039250 S/0032/64/030/006/0659/0661

AUTHORS: Kaplan, B. Ya.; Sorokovskaya, I. A.; Shiryayeva, O. A.

TITLE: Pulse polarograph determination of tellurium traces in metallic antimony, indium, gallium, and bismuth

SOURCE: Zavodskaya laboratoriya, v. 30, no. 6, 1964, 659-661

TOPIC TAGS: tellurium, antimony, indium, gallium, bismuth, polarographic analysis, vector polarograph TsLA, Mervin Harwell polarograph

ABSTRACT: A new procedure based on the square-pulse polarographic analysis was developed for tellurium determination in pure metals. Antimony, indium, gallium, and bismuth were dissolved in a weakly acid potassium chloride solution. Tellurium was reduced to the elementary state by the hydrochloride of hydroxylamine and thiosulfate and then co-precipitated with sulfur (sulfur was chosen because it formed no electroactive substances). Unlike the usual polarographic waves, the pulse-polarographic peaks of acid solutions were proportional to tellurite concentrations. This fact was explained by the different types of the reversibility in the processes taking place during the cathode reduction of elementary tellurium and hydrogen. It

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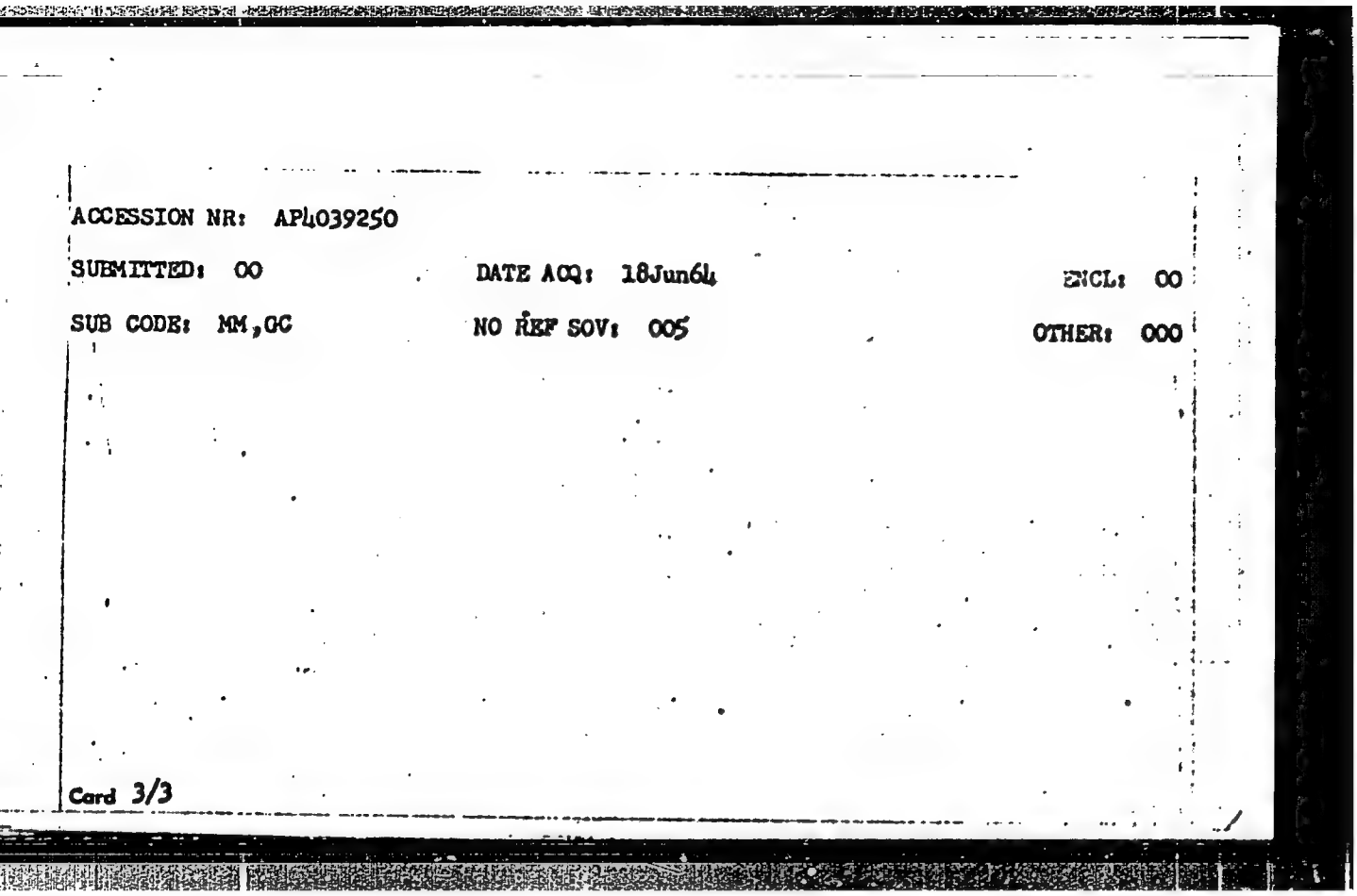
ACCESSION NR: AP4039250

was required to obtain those conditions under which the slope of the tellurium peaks would be minimal. This requirement was satisfied when a potassium chloride solution with pH = 1.5 - 2.5 was used (it was later proved that analogous tellurium peaks may be obtained with pH = 2-3). The polarograms were registered by a Mervin-Harwell or a vector TsLA polarograph. High acidity of the tellurium solution helped to prevent the pollution of residue with bismuth, antimony, arsenic, and other elements. It was established that copper, bismuth, antimony, arsenic, gold, selenium, and other elements produced no significant effects if their contents varied from 0.1 to 1.2%. Tellurium determination was made without a preliminary separation of these elements (except for arsenic and selenium, which affected the height of the peak). A small systematic loss of tellurium occurred during the transfer of the analyzed sample to the solution for polarographic determinations. This error was eliminated by introducing additional tellurium into the primary solutions. The accuracy of this method was approximately $2 \cdot 10^{-5}$%. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut redkometallicheskoy prom*shlennosti (State Scientific Research and Design Institute of Rare Metal Industry)



ACCESSION NR: AP4039250

SUBMITTED: 00 DATE ACQ: 18Jun64 ENCL: 00

SUB CODE: MM,GC NO REF SOV: 005 OTHER: 000

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EWP(t)/EWP(b) IJP(c) RDW/JD

S/0032/65/031/001/0039/0039

15
10B

AUTHORS: Kaplan, B. Ya.; Shiryayeva, O. A.

TITLE: Use of diethyldithiocarbamate extraction for pulse polarographic detection of tellurium

SOURCE: Zavodskaya laboratoriya, v. 31, no. 1, 1965, 39

TOPIC TAGS: diethyldithiocarbamate, polarographic analysis, tellurium, tellurium compound

ABSTRACT: The method of diethyldithiocarbamate extraction described by V. G. Goryushina, E. Ya. Biryukova and T. A. Archakova (Fiziko-khimicheskiye metody analiza splavov i metallov, p. 102, Moskovskiy dom nauchno-tekhnicheskoy propagandy, 1962) was simplified by eliminating the addition of potassium cyanide in determining the tellurium content by the pulse-polarographic method. With a 1-gram dispersion containing $1 \cdot 10^{-5}$ % Te, the analytical results had a variation coefficient of 27 and a systematic undervalue of 27%. The 1-gram dispersion was dissolved in a (4:1) solution of nitric and hydrochloric acids, evaporated, and redissolved in 10 ml of hydrochloric acid (after removing the nitrates with formic

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ACCESSION NR: AP5002169

acid), added to 20 ml of 20% Trilon solution, and neutralized with ammonia. After adding 2 ml of 0.5% water solution of sodium diethyldithiocarbamate, the solution was kept in the dark for 20 minutes, and separated into two 10-ml portions. After 2 washings the extract was evaporated with 3 ml of HNO_3 and 0.2 ml of K_2SO_4, treated with 2 ml of H_2SO_4, and again evaporated. The residue was analyzed by the pulse-polarographic method.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti (State Scientific Research and Planning Institute of the Rare Metals Industry)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, IC

NO REF SOV: 002 OTHER: 000

Card 2/2

L [illegible] EWT(m)/EWP(t)/EWP(b) LJP(c) JD

ACCESSION NR: AP5014483 UR/0032/65/031/006/0658/0661
546.68:543.253

17
16
B

AUTHORS: Kaplan, B. Ya.; Shiryayeva, O. A.

TITLE: Pulse polarographic determination of thallium in metallic indium 27 27

SOURCE: Zavodskaya laboratoriya, v. 31, no. 6, 1965, 658-661

TOPIC TAGS: impurity content, indium, polarographic analysis, peak detection, thallium, sensitivity increase /Mervin Carvelle square wave polarograph model 3, [illegible] graphic polarograph

ABSTRACT: Two pulse polarographic methods for determining small percentages of [illegible] metallic indium were developed, resulting in increased sensitivity. [illegible] of the previous method, associated with the masking of the thallium peak by peaks of other elements, were eliminated. The determination of 10^{-4}% thallium in indium is possible in an ammonium-Trilon base electrolyte without separation of the indium. The peak of the traces of copper which is superimposed on the thallium is associated with the potassium cyanide, the oxygen is removed by adding sulfite. The thallium is then masked only by bismuth and antimony (both of which are rarely present) and can be reliably determined in amounts above

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ACCESSION NR: AP5014488

$2 \cdot 10^{-4}$%. The low sensitivity is connected with the low diffusion of thallium in Trilon and the limited solubility of indium. The detection sensitivity can be increased by one order of magnitude when the polarographic analysis is made of thallium in sulfur-phosphoric acid solution after preliminary etheral extraction [illegible] from a solution of indium in 6n HCl. In a base electrolyte mixture of 1 n phosphoric and sulfuric acid, pulse polarographic analyses were made of the solutions of the barren remains obtained after evaporation concentration and oxidation of the etheral extracts of an indium solution. Starting with the third extract, all polarographs displayed a peak corresponding to several micrograms of thallium in 5 ml. The addition of thallium to the solution doubled the peaks, but even with a minimal scanning speed of the Mervin-Carvelle model 3 [illegible] the peaks remained symmetrical, indicating the presence [illegible] extracts. The masking peak increased with the addition of aliquot. Gelatin suppresses the masking peak but does not affect the thallium peak. With a temperature increase of 20-85C, the masking peak [illegible] times. The oscillographic polarograph OP-2 showed that the thallium wave was a "pre-wave," not the basic wave. Study of the anode peak gave [illegible] the kinetic character of the pre-wave, but the mechanism for pre-wave generation is not understood. The etheral extraction is sufficiently selective, leaving only lead, and this can be co-precipitated with barium sulfate.

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ACCESSION NR: AP5014488

For 3.5 micrograms of thallium added to 1 g of indium in an HCl solution, the sensitivity is $1.6 \cdot 10^{-5}$%. Orig. art. has: 1 table and 2 figures.

[illegible] Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut [illegible] promyshlennosti (State Scientific Research and Design Institute [illegible] Industry

SUBMITTED: 00 ENCL: 00 SUB CODE: IC, OP

NO REF SOV: 003 OTHER: 002

Card 3/3

KAPLIN, [illegible]; POPOKOTSKAYA, I.A.; SHIYAN'YA, O.A.

[illegible] polarographic method of analysis of solutions at high temperature. Zhur. anal. khim. 20 no.9:927-933 '65.
(MIRA 18:9)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti, Moskva.

SOV/58-59-10-22821

Translation from: Referativnyy Zhurnal, Fizika, 1959, Nr 10, p 145 (USSR)

AUTHORS: Shur, Ya.S., Luzhinskaya, M.G., Vlasov, K.B., Shiryayeva, O.I., Zaykova, V.A.

TITLE: On the Relation Between the Magnetic Properties and Sensitivity of Magnetostrictive Receivers

PERIODICAL: Tr. In-ta fiz. metallov. Ural'skiy fil. AN SSSR, 1958, Nr 20, pp 131-140

ABSTRACT: The authors made an experimental study of the relation between the sensitivity of magnetostrictive receivers and the magnetic characteristics of a number of materials out of which they were produced. For this study soft magnetic materials were used that possess very dissimilar magnetic and magnetostrictive properties. It is demonstrated that for every receiver the greatest magnitude of sensitivity is attained at those values of the magnetizing field and that magnitude of induction, at which the greatest value of the product $\mu \sim \cdot (\partial\lambda/\partial B)$ is obtained for the given material. The sensitivity of receivers made of different kinds of materials, measured at optimum polarization, is proportional to the

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On the Relation Between the Magnetic Properties and Sensitivity of Magnetostrictive Receivers

magnitudes $\mu_{\sim} \cdot (B_{opt})\ (\partial\lambda/\partial B)\ (B_{opt})$, $\mu_{\sim} \cdot (B_{opt})\ (\lambda_s/I_s)$, or $\mu_o(\lambda_s/I_s)$ obtained on these materials. It follows that if the static magnetic characteristics μ_o, λ_s, and I_s of the materials are known, then, using the correlation $e_{max} \sim \mu_o (\lambda_s/I_s)$, it is possible to make an approximate comparative estimate of the magnitude of sensitivity of magnetostrictive receivers produced from these materials. Cf abstract 22801.

V.A. Zaykova

Card 2/2

AUTHORS: Shur, Ya. S., Luzhinskaya, M. G., Vlasov, K. B., Shiryayeva, O. I., Zaykova, V. A. SOV/48-22-10-18/23

TITLE: On the Dependence of the Sensitivity of Magnetostrictive Receivers on Their Magnetostrictive Characteristics (O zavisimosti chuvstvitel'nosti magnitostriktsionnykh priyemnikov ot ikh magnitnykh kharakteristik)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 10, pp 1259 - 1262 (USSR)

ABSTRACT: According to theoretical calculations (Refs 1 - 3) the sensitivity of the magnetostrictive receiver can be related to the magnetic characteristics of the material of the receiver as follows:

$$e \sim \mu_{\sim} \frac{\partial \lambda}{\partial B} \quad (1)$$

$$e_{max} \sim \mu_{\sim} (B_{opt.}) \frac{\lambda_s}{I_s} \quad (2)$$

$$e_{max} \sim \mu_0 \frac{\lambda_s}{I_s} \quad (3)$$

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On the Dependence of the Sensitivity of Magnetostrictive Receivers on Their Magnetostrictive Characteristics

SOV/48-22-10-18/23

The symbols denote: e - sensitivity, $\mu_{\sim}$ - apparent permeability, λ - magnetostriction, B - induction, λ_s - saturation magnetostriction, I_s - saturation magnetization, μ_0 - initial permeability, e_{max} - maximum sensitivity of the receiver at a certain optimum value of the induction of the polarization B_{opt}. In the present paper the above-mentioned theoretical relations and their possible application in the selection of the material for magnetostrictive receivers were checked by experiment. Materials with widely differing magnetic properties were investigated. The measurements showed that after different treatment the alloys exhibited widely differing magnetic properties and sensitivities. From experimental data can be seen that in the case of a modification of the magnetic state of the concerned receiver its sensitivity varies according to formula (1). The relations (2) and (3), which relate the maximum values of the receiver sensitivity of various alloys, are satisfied less exactingly. One of the reasons for this disagreement might be errors in the experimental determination of various characteristics.

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SOV/48-22-10-18/23

On the Dependence of the Sensitivity of Magnetostrictive Receivers on Their Magnetostrictive Characteristics

The results show that when formula (3) is employed an approximate comparative estimation of the sensitivity of the material can be given if the values of μ_0, λ_s, and I_s are known. Detailed results of this work are published in reference 3. There are 3 figures and 3 references, 1 of which is Soviet.

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Metal Physics,AS USSR)

Card 3/3

88432
S/056/60/039/006/021/063
B006/B056

24.7900 (1147, 1158, 1160)

AUTHORS: Shur, Ya. S., Shiryayeva, O. I.

TITLE: Ferromagnetic Resonance in Silicon Iron Crystals and Its Relation to the Domain Structure

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1596 - 1601

TEXT: It was the purpose of the experimental investigations described here to determine the interrelation between the course of the ferromagnetic resonance absorption curves and the nature of the domain structure of silicon iron single crystals (3.5% Si). Silicon iron was chosen because it has a relatively small anisotropy constant, and because its magnetic structure is well known. 15 single crystal disks of various diameters (4 - 15 mm) and thicknesses (0.07 - 0.2 mm), which were cut parallel to the planes (001) and (011) were investigated. The specimens were electrolytically polished after a heat treatment (1100°C) in vacuo. The ferromagnetic resonance absorption was investigated at 9370 Mc/sec. The domain structure was investigated by the powder pattern method. A

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Ferromagnetic Resonance in Silicon Iron Crystals and Its Relation to the Domain Structure

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comparison between the resonance absorption curves and the domain structures showed that besides the resonance peak observed in strong saturating fields, a second peak may occur in weaker fields if the crystal has a multidomain structure and if the highfrequency field is parallel to the domain boundaries. This proves the theoretical rules given in Refs. 4,5. This phenomenon may be used for a more exact investigation of the domain structure of ferromagnetics, especially in such cases in which the known methods of direct observation are not applicable. There are 4 figures and 7 references: 2 Soviet and 5 US.

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Metal Physics of the Academy of Sciences USSR)

SUBMITTED: July 19, 1960

Text to Fig.1: Absorption curves for a crystal disk cut parallel to the (011) plane; $\vec{H}$ parallel to the axes [110], [111] or [100].
Text to Fig.2: Absorption curves for a crystal disk cut parallel to the (001) plane; $\vec{H}$ parallel to the axes [100] or [110].

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B006/B056

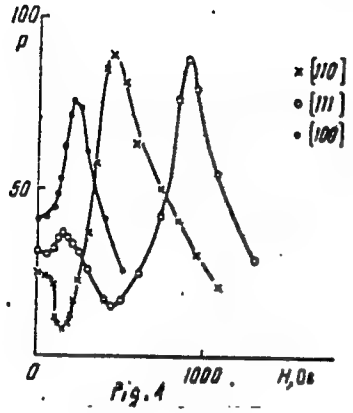

Fig. 1

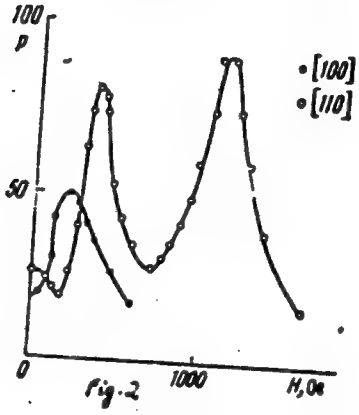

Fig. 2

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S/0048/64/028/003/0504/0506

ACCESSION NR: AP4023397

AUTHOR: Onopriyenko, L.G.; Shiryayeva, O.I.; Shur, Ya.S.

TITLE: Ferromagnetic resonance in magnetically uniaxial single crystals and domain structure [Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963]

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v.28, no.3, 1964, 504-506

TOPIC TAGS: ferromagnetic resonance, domain structure, domain wall oscillation, domain wall resonance

ABSTRACT: It has previously been shown that a ferromagnetic substance with domain structure has three coupled resonant frequencies, due to precession of the magnetization within the domains and to oscillation of the domain walls (K.B.Vlasov and L.G.Onopriyenko, Fizika metallov i metallovedeniye,15,45,1963). These frequencies were calculated for an ellipsoidal sample having plane-parallel or cylindrical domain structure by the method employed by J.Smit and H.G.Beljers (Phillips Res.Rep. 10,113,1955), and the results of the calculations are presented briefly. Ferromagnetic resonances were observed at 36 895 megacycles in single crystal discs of mag-

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ACCESSION NR: AP4023397

netic plumbite and cobalt for various directions of the applied static field. The plumbite discs were 0.56 mm in diameter, 0.10 mm thick, and were cut with the axis of easy magnetization perpendicular to the plane of the disc. Two resonances were observed at fields for which a domain structure exists, and a third peak was observed at a strong field, corresponding to a state without domain structure. As the angle between the applied field and the axis of easy magnetization was decreased, this third peak shifted to lower fields and disappeared, together with one of the domain structure peaks, at an angle of 63°. The remaining peak disappeared at 36°. This behavior is in rough agreement with the theory. The cobalt discs were 7 mm in diameter, 0.2 mm thick, and were cut with the axis of easy magnetization in the plane of the disc. With the applied field in the plane of the disc perpendicular to the axis of easy magnetization, and the high frequency field perpendicular to the disc, two peaks were observed, of which one is related to the domain structure. As an angle between the applied field and the preferred axis was decreased, the peaks decreased in intensity, and disappeared at an angle of 78°. The cobalt discs were examined at various temperatures. Two resonance peaks were observed at temperatures up to 250°C. The resonance field decreased with increasing temperature. This behavior was expected. Orig.art.has: 5 formulas.

Card 2/3

ACCESSION NR: AP4023397

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Physics of Metals, Academy of Sciences, SSSR)

SUBMITTED: 00	DATE ACQ: 10Apr64	ENCL: 00
SUB CODE: PH	NR REF SOV: 001	OTHER: 002

Card 3/3

SOURCE CODE: UR/0048/66/030/006/1012/1015

AUTHOR: [illegible], Yu. S.; Shiryayeva, O. I.

ORG: Institute of Metal Physics, Academy of Sciences, SSSR (Institut fiziki metallov Akademii nauk SSSR)

TITLE: Ferromagnetic resonance in magnetically uniaxial single crystals with different initial domain structures /Report, All-Union Conference on the Physics of Ferromagnetism and Antiferromagnetism held 2-7 July in Sverdlovsk/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1012-1015

TOPIC TAGS: ferromagnetic resonance, magnetic domain structure, lead compound, ferrite, single crystal

ABSTRACT: In order to investigate the influence of domain structure on ferromagnetic resonance (FMR), the authors have measured the high frequency absorption of magnetoplumbite ($PbFe_{12}O_{19}$) single crystal plates at frequencies below the 36.9 kMHz natural FMR frequency. The results obtained with a 0.5 x 0.5 x 0.05 mm specimen cut with the faces perpendicular to the hexagonal axis (which is the easy magnetization axis of the magnetically uniaxial crystal) are presented. For the measurements the specimen was mounted on the end wall of a cylindrical cavity, which was located in the field of an electromagnet and was excited in the H_{112} mode. Before the measurements were made, either honeycomb or maze type domain structures were produced in the

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ACC NR: AP6029123

specimens by magnetizing them to saturation in directions perpendicular or parallel, respectively, to the hexagonal axis. These domain structures were stable in fields up to 11 kOe and disappeared in fields stronger than 15 kOe. Constant frequency absorption curves were recorded in varying applied fields making different angles θ with the hexagonal axis. When θ was 90° there were observed a strong absorption peak at 20.8 kOe and two or three subsidiary peaks (depending on the domain structure; there were three peaks in the case of honeycomb domains and two in the case of maze domains) at fields between 7 and 11 kOe. As θ was decreased the main resonance shifted slightly toward lower fields and the subsidiary peaks approached each other, merging first with each other and finally with the main peak. At $\theta = 67^\circ$ there was a single resonance peak, and no resonance was observed with $\theta < 46^\circ$. From the fact that different numbers of subsidiary peaks were observed with samples having different initial domain structures it is concluded that domain structure affects FMR absorption. The number of resonance peaks and the θ dependence of the absorption curve for the case of maze type domain structure are in qualitative agreement with the theory of L.G.Onopriyenko, O.I.Shiryayeva, and Ry.S.Shur (Izv. AN SSSR Ser. fiz., 28, 504 (1964)). The reason for the appearance of a third subsidiary peak in the case of honeycomb domain structure is not understood. The model of Onopriyenko et al. of uniformly magnetized cylindrical domains is not adequate to describe the honeycomb domain structure. It is suggested that it may be possible to employ FMR absorption to investigate domain structures in the interior of crystals. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 004

Card 2/2 bc

4-3

USSR / Farm Animals, Cattle (Small)

Abs Jour: Ref Zhur-Biol., No 2, 1958, 7183

Author : V. I. Oryel, G. I. Smolina, T. Ye. Shilina, N. V. Zhmakina, L. I. Prikhod'ko, V. I. Fedoseyeva, O. S. Shiryayeva, R. Sergeyeva.

Inst : Starvopol Agricultural Institute

Title : The Effect of Full Value Protein Feeding on the Thickness of the Wool of Soviet Merino Ewes Two to Twelve Months Old.

Orig Pub: Sb. Nauchno-issled. rabot stud. Stavropol'sk. s-kh. in-t, 1956, vyp. 4, 79-81.

Abstract: With biologically full value protein feed the active growth of wool in young ewes occurs at the age of 2 weeks to six months.

Card 1/1

19

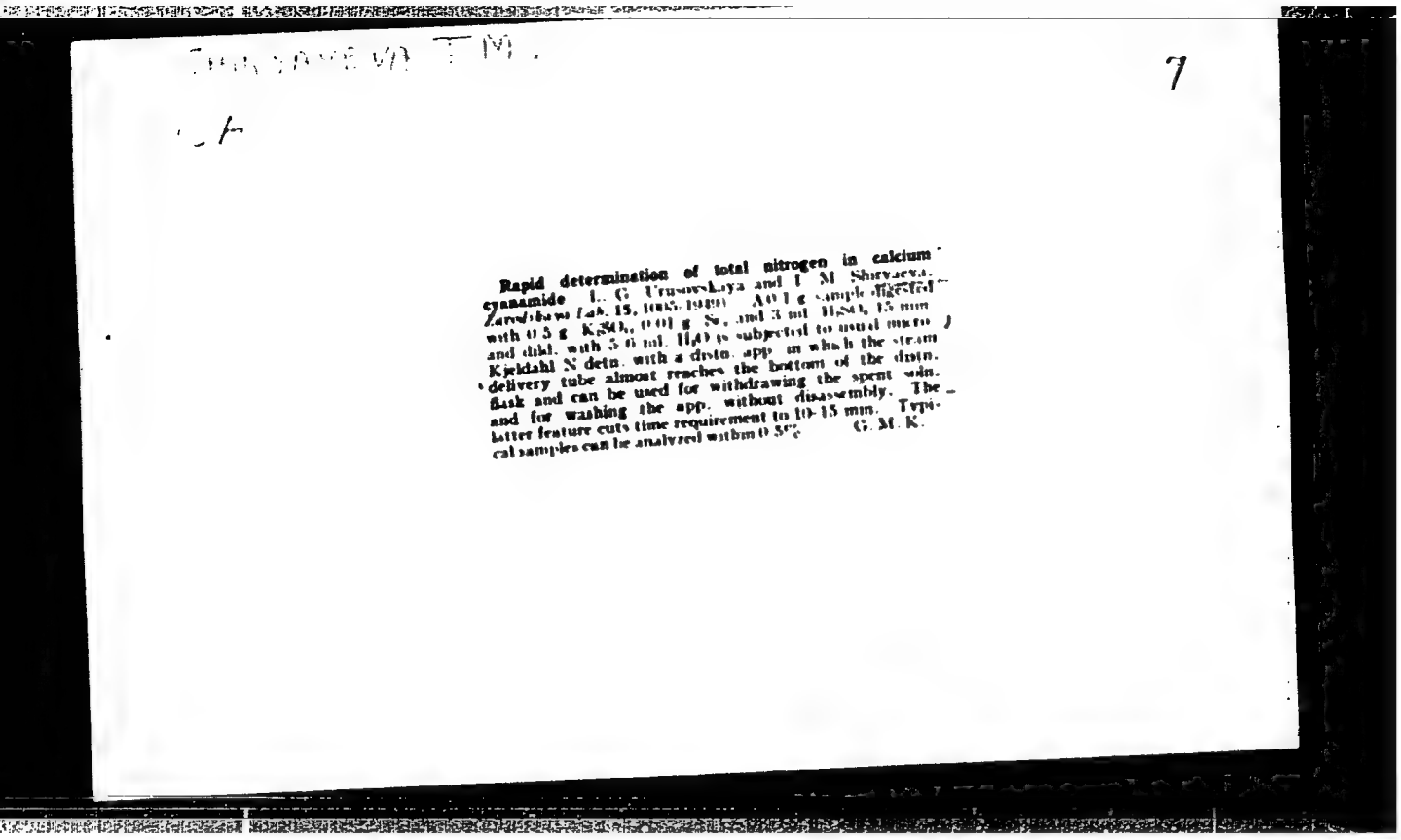
SHIRYAYEVA, P.I. (Kuyby.

Produce more ... cellent quality. Shvein. prom. no.3:27-29 Je- My-Je] '61. (MIRA 16:11)

KOSOVSKIY, A.A., inzh. [deceased]; SHIRYAYEVA, P.P., tekhnik

Analysis of a six-year study of the state of cable lines using rectified 50 kv. voltages. Elek. sta. 33 no.4:68-72 Ap '62. (MIRA 15:7)

(Electric lines--Testing)



Rapid determination of total nitrogen in calcium cyanamide L. G. Urusova-Kaya and I. M. Shuvaeva. *Zavod. Lab.* 15, 1085 (1949). A 0.1 g sample digested with 0.5 g K_2SO_4, 0.01 g Se, and 3 ml H_2SO_4, 15 min and dild. with 5.0 ml. H_2O is subjected to usual macro Kjeldahl N detn. with a distn. app. in which the steam delivery tube almost reaches the bottom of the distn. flask and can be used for withdrawing the spent soln. and for washing the app. without disassembly. The latter feature cuts time requirement to 10-15 min. Typical samples can be analyzed within 0.3%. G. M. K.

SHURYAEVA, T.M.

7

Photocolorimetric determination of small quantities of iron in aluminum ammonium alums and finely dispersed aluminum oxide. T. M. Shuryaeva and R. S. Oks. *Zavodskaya Lab.* 15, [illegible](1949).—Dissolve 10 g. of sample in hot water and add 10 ml. of 2.5 N HCl and 1-5 drops Br water. Boil until colorless, cool, add 30 ml. of [illegible] water. [illegible] NH_4 [illegible] to 100 ml., mix, and [illegible]. With Al oxide soln. first fuse the sample with [illegible] and $NaHCO_3$ and leach with water. G. M. Kosolapoff

KOSTIN, D.I.; SHERYAYEVA, T.M.; PORONINA, M.G.

[Production control of calcium carbide, calcium cyanamide, black cyanide, dicyandiamide, melamine, and potassium ferrocyanide.] Kontrol' proizvodstva karbida kal'tsiia, tsianamida kal'tsiia, chernogo tsianplava, ditsiandiamida melamina i zheleziste- sinerodistogo kaliia. Moskva, Goskhimizdat, 1962. 158 p. (Analiticheskii kontrol' proizvodstva v azotnoi promyshlennosti, no.13). (MIRA 18:6)

1. Sotrudniki laboratorii kontrolya proizvodstva tsentral'noy zavodskoy laboratorii Chernorechenskogo khimicheskogo zavoda im. M.I.Kalinina.

L.S. Oks, T.M. Shimaeva. Photocolorimetric determination of silicon dioxide in calcium carbide. P. 1210

The Chernorechensk
Chemical Factory.

Zav. Labor., No. 10, 1959

PHASE I BOOK EXPLOITATION SOV/4348

Akademiya nauk SSSR. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali

Primeneniye vakuuma v metallurgii (Use of Vacuum in Metallurgy) Moscow, Izd-vo AN SSSR, 1960. 334 p. Errata slip inserted. 4,900 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali.

Resp. Ed.: A.M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: G.M. Makovskiy; Tech. Ed.: S.G. Markovich.

PURPOSE: This collection of articles is intended for technical personnel interested in recent studies and developments of vacuum steelmaking practice and equipment.

COVERAGE: The book contains information on steel melting in vacuum induction furnaces, and vacuum arc furnaces, reduction processes in vacuum, and degassing of steel and alloys. The functioning of apparatus and equipment, especially vacuum furnaces and vacuum booster pumps is also analyzed. Personalities are mentioned in connection with some of the articles and will appear in the Table of Contents. Three articles have been translated from English. Some of the

Vero, I. (Hungarian People's Republic). The Mechanism of Degassing of Molten Steel in Vacuum 257

Kamenetskaya, D.S., I.B. Piletskaya, and V.I. Shiryayeva. On the Problem of Vacuum Melting of Metals 264

Elliot, D. Solubility of Nitrogen in Iron-Chromium-Nickel Melts 273

PART V. APPARATUS AND EQUIPMENT

Vogel', A.A. Levitation Melting of Metals in Vacuum or in the Inert-Gas Atmosphere 279

Marmer, E.N., and E.Ye. Khazanov. Investigation of Individual Subassemblies of Vacuum Electric Furnaces 290

Mikulinskiy, A.S., A.P. Selyanskiy and A.G. Poluboyartsev. Highly Productive Continuous Vacuum Furnaces 298

Tsetlin, A.B. A New Series of Highly Productive Vapor-Stream Pumps [G.G. Kamenshchikov and V.A. Kosarev participated in the work] 310

Kuznetsov, V.I. Highly Productive Mechanical Booster [Roots] Pumps 316

Baykov, V.S. Determination of Gas Content in Steel and Ferroalloys 320

Gurevich, Ye.D. Hot Rolling of Metals in Vacuum 326

AVAILABLE: Library of Congress

14

L 3713-66 EWT(m)/EWP(t)/EWP(z)/EWP(b) IJP(c) JD/HM/JG

ACC NR: AP5027142 UR/0126/65/020/004/0566/0569

AUTHOR: Shiryayev, V.I.; Pautov, V.D.

ORG: Central Research Institute for Ferrous Metallurgy im. I.P. Bardin (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: Properties of iron purified by electron beam zone melting

SOURCE: Fizika metallov i metallovedeniye, v.20, no.4, 1965, 556-569

TOPIC TAGS: metal zone refining, electron beam melting, iron, vaporization, METAL ZONE MELTING, METAL PURIFICATION

ABSTRACT: The apparatus for electron beam zone melting had a power of 2.5 kilowatts, and the maximum voltage between the annular tungsten cathode, made of wire with a diameter of 0.8 mm, and the sample which served as the anode, was 8000 volts. The vapor pressure in the system was 10^{-5} to 10^{-6} mm Hg. The temperature was maintained at -40°C. The rate of displacement of the cathode could be regulated within the limits of 10-300 mm/ hour. In the tests, the diameter of the rod-shaped samples varied from 1 to 10 mm. The overall length of the melted section of the rod was 150 mm. The width of the melting zone varied from 2 to 6 mm, depending on the metal and the diameter of the sample. The iron subjected to zone melting was relatively pure; chemical and gas

Card 1/3 UDC: 539.292:539.3/8

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ACC NR: AP5027142

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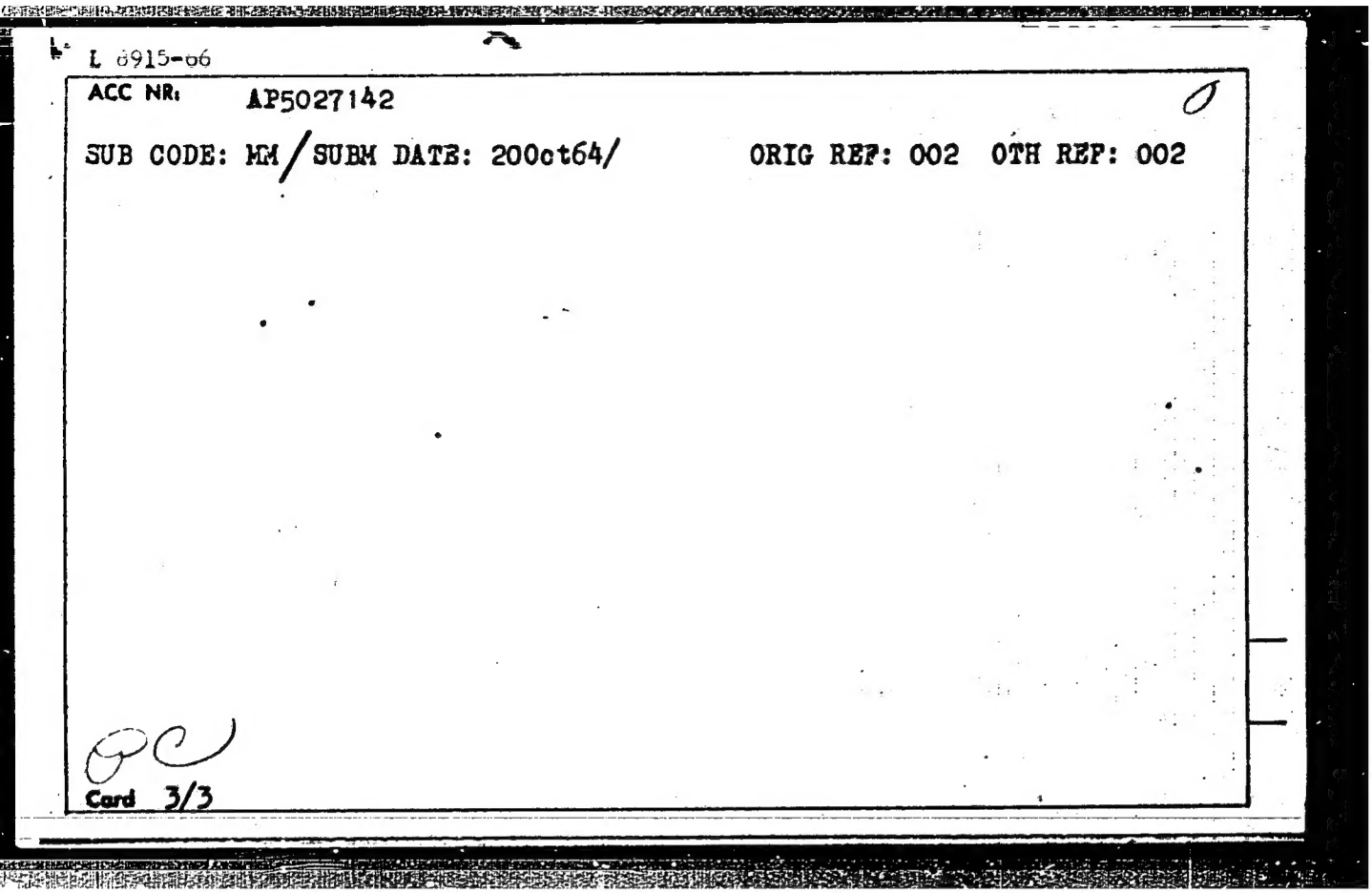
analysis gave the following (wt%): 0.003-0.004 carbon; 0.006 sulfur; traces of phosphorous; 0.011 oxygen; 0.0003 hydrogen; 0.002 nitrogen; remainder iron. Spectrum analysis indicated only traces of copper, nickel, molybdenum, aluminum, manganese, chromium, and silicon. After electron beam zone melting, no impurities were shown by chemical and spectrum analysis within limits of analytical error. The basic method for determination of the purity of metals is determination of the electrical resistance at the temperature of liquid helium. The ratio of the electrical resistances, $R_{300°K}/R_{4.20°K}$, for the initial iron used in the tests was equal to 83: for the last section of the sample after 4 passes, it was 92; and for the initial section after 4 passes it was 115. Thus the residual electric resistance of the iron along its whole length was less than in the initial sample; this could be connected with the elimination of impurities by vaporization. The results indicate also that the purification of the iron is due to displacement of the impurities in the melting zone as well as to vaporization. The yield point of the purified iron, with decreased temperature, rises to a smaller degree than the yield point of the initial iron but, with a lowering of the deformation rate, the difference between the yield point of the purified iron at the temperature of liquid nitrogen and at room temperature decreases sharply. Analogous tests were also made on samples of nickel vanadium, indium, molybdenum, tungsten, and copper. Orig. art. has: 4 figures and 1 table.

Card 2/3



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ACC NR: AP5027142 O

SUB CODE: MM / SUBM DATE: 20Oct64/ ORIG REF: 002 OTH REF: 002

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